

REMARKS

Claims 1-27 are pending in the application. Claims 6-12 and 20-27 are withdrawn from consideration as being directed to a non-elected invention. In the Office Action of June 7, 2002, the Examiner made the following disposition:

- A.) Objected to Figures 12-14.
- B.) Rejected claims 1-5, 13-14, and 16-19 under 35 U.S.C. §102(e) as being anticipated by *Maruska*.
- C.) Rejected claim 15 under 35 U.S.C. §103(a) as being unpatentable over *Maruska* in view of *Shakuda*.

Applicants respectfully traverse the rejections and address the Examiner's disposition as follows:

A.) Objection to Figures 12-14:

Figures 12, 13, and 14 have been amended as per the Examiner's request to overcome the objection. Specifically Figures 12, 13, and 14 have been labeled --RELATED ART--.

Applicants respectfully submit that the objection has been overcome and request that it be withdrawn.

B.) Rejection of claims 1-5, 13-14, and 16-19 under 35 U.S.C. §102(e) as being anticipated by *Maruska*:

Applicants respectfully disagree with the rejection.

Claims 1 and 13 have each been amended to replace "a group IIB element" with --cadmium--. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE".

Applicants' independent claims 1 and 13, each as amended, each claim an insulating nitride layer formed from a group III-V nitride compound semiconductor heavily doped mostly with cadmium. Support for doping with cadmium can be found in Applicants' specification, for example, on page 11, lines 1-15 and in Table 1 on page 12.

This is clearly unlike *Maruska*, which fails to disclose an insulating nitride layer doped with cadmium. *Maruska* discloses introducing n-type and p-type dopants into a layer structure. *Maruska* discloses the following n-type dopants: silicon, germanium, sulfur, and oxygen. And *Maruska* discloses the following p-type dopants: beryllium, magnesium, calcium, carbon, and zinc. Unlike Applicants' claims 1 and 13, nowhere does *Maruska* disclose or even suggest using

cadmium as a dopant. In fact, nowhere does *Maruska* even suggest that other dopants can be used besides those listed above for *Maruska*.

Therefore, *Maruska* fails to disclose or even suggest Applicants' independent claims 1 and 13.

Claims 2-5, 14, and 16-19 depend directly or indirectly from claims 1 and 13 and are therefore allowable for at least the same reasons that claims 1 and 13 are allowable.

Applicants respectfully submit that the rejection has been overcome and request that it be withdrawn.

C.) Rejection of claim 15 under 35 U.S.C. §103(a) as being unpatentable over *Maruska* in view of *Shakuda*:

Applicants respectfully disagree with the rejection.

Applicants' independent claim 13, as amended, is allowable over *Maruska* as discussed above.

Shakuda still fails to disclose or suggest doping with cadmium. *Shakuda* discloses a zinc or magnesium dopant (Col. 1, lines 61-63), however, nowhere does *Shakuda* disclose or even suggest a cadmium dopant. Therefore, *Maruska* in view of *Shakuda* still fails to disclose or suggest Applicants' independent claim 13.


Claim 15 depends directly or indirectly from claim 13 and is therefore allowable for at least the same reasons that claim 13 is allowable.

Applicants respectfully submit that the rejection has been overcome and request that it be withdrawn.

CONCLUSION

In view of the foregoing, it is submitted that claims 1-5 and 13-19 are patentable. It is therefore submitted that the application is in condition for allowance. Notice to that effect is respectfully requested.

Respectfully submitted,

 (Reg. No. 45,034)
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Drawings:

Please amend Figures 12, 13, and 14 as indicated on the drawing sheet marked in red submitted with the Request for Approval of Drawing Changes submitted herewith.

In the Claims:


Please amend claims 1 and 13 as follows:

1. (Amended) An insulating nitride layer formed from a group III-V nitride compound semiconductor heavily doped mostly with [a group IIB element] cadmium.

13. (Amended) A semiconductor device which has an insulating nitride layer formed from a group III-V nitride compound semiconductor heavily doped mostly with [a group IIB element] cadmium.

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited as First Class Mail in an envelope addressed to Asst. Commissioner for Patents, Washington, D.C. 20231 on September 6, 2002.

 (Reg. No. 45,034)
Christopher P. Rauch